

CLAIMS

1. A sheath assembly adapted for use with an endoscopic insertion tube, the sheath assembly comprising:

a body portion adapted to at least partially encapsulate the insertion tube; and

a working channel attached to the body portion and extending along at least a portion of the body portion, the working channel having a cut disposed therein, the cut being at least partially transverse to a longitudinal axis of the working channel, the working channel being separable along at least a portion of the cut when the working channel is subjected to an axial tension force.

2. The assembly of claim 1 wherein the cut comprises a spiral cut.

3. The assembly of claim 1 wherein the working channel further has a plurality of additional cuts disposed therein, the plurality of additional cuts being at least partially transverse to the longitudinal axis, the working channel being separable along at least a portion of at least some of the plurality of additional cuts when the working channel is subjected to the axial tension force.

4. The assembly of claim 1 wherein the working channel includes a first plurality of additional cuts disposed in a first side thereof and a second plurality of additional cuts disposed in a second side thereof, the additional cuts being at least partially transverse to the longitudinal axis, the working channel being separable along at least a portion of at least some of the additional cuts when the working channel is subjected to the axial tension force.

5. The assembly of claim 4 wherein the second side is substantially opposite from the first side.

6. The assembly of claim 4 wherein the additional cuts are uniformly disposed within the working channel.

7. The assembly of claim 4 wherein the additional cuts are non-uniformly distributed within the working channel.

8. The assembly of claim 1 wherein the cut extends approximately perpendicularly to the longitudinal axis of the working channel.

9. The assembly of claim 1 wherein the cut extends only partially through the working channel.

10. The assembly of claim 1 wherein the cut extends along a portion of the working channel adapted to be approximately aligned with a bending section of the insertion tube.

11. The assembly of claim 1 wherein the working channel is attached to an outer surface of the body portion.

12. The assembly of claim 1 wherein the working channel extends along an inner surface of the body portion and is adapted to be positioned between the body portion and the insertion tube when the body portion is positioned to at least partially encapsulate the insertion tube.

13. The assembly of claim 1 wherein the working channel is adapted to overlap along at least a second portion of the cut when the working channel is subjected to an axial compression force.

14. The assembly of claim 1 wherein the working channel is attached to the body portion at a plurality of attachment points.

15. The assembly of claim 1 wherein the working channel is adapted to slideably receive at least a portion of a medical device having an operating end, the working channel comprising an enlarged end portion proximate an end of the body portion, the enlarged end portion being adapted to at least partially receive the operating end of the medical device.

16. The assembly of claim 1 wherein the working channel comprises a channel fabricated from a material selected from the group consisting of TEFLON[®], urethane, polyvinyl chloride (PVC), acrylic, polycarbonate, and polyethylene terephthalate.

17. The assembly of claim 1 wherein the body portion includes an end cap adapted to encapsulate a working end of the insertion tube.

18. An endoscopic assembly, comprising:
an elongated insertion tube;
a sheath assembly including a body portion at least partially encapsulating the insertion tube; and
a working channel attached to the body portion and extending along at least a portion of the body portion, the working channel having a cut disposed therein, the cut being at least partially transverse to a longitudinal axis of the working channel, the working channel being separable along at least a portion of the cut when the working channel is subjected to an axial tension force.

19. The assembly of claim 18 wherein the cut comprises a spiral cut.

20. The assembly of claim 18 wherein the working channel further has a plurality of additional cuts disposed therein, the plurality of additional cuts being at least partially transverse to the longitudinal axis, the working channel being separable along at least a portion of at least some of the plurality of additional cuts when the working channel is subjected to the axial tension force

21. The assembly of claim 18 wherein the working channel includes a first plurality of additional cuts disposed in a first side thereof and a second plurality of additional cuts disposed in a second side thereof, the additional cuts being at least partially transverse to the longitudinal axis, the working channel being separable along at least a portion of at least some of the additional cuts when the working channel is subjected to the axial tension force.

22. The assembly of claim 21 wherein the second side is substantially opposite from the first side.

23. The assembly of claim 21 wherein the additional cuts are uniformly disposed within the working channel.

24. The assembly of claim 21 wherein the additional cuts are non-uniformly distributed within the working channel.

25. The assembly of claim 18 wherein the cut extends approximately perpendicularly to the longitudinal axis of the working channel.

26. The assembly of claim 18 wherein the cut extends only partially through the working channel.

27. The assembly of claim 18 wherein the insertion tube includes a bending section, and wherein the cut extends along a portion of the working channel approximately aligned with the bending section of the insertion tube.

28. The assembly of claim 18 wherein the working channel is attached to an outer surface of the body portion.

29. The assembly of claim 18 wherein the working channel extends along an inner surface of the body portion and is positioned between the body portion and the insertion tube.

30. The assembly of claim 18 wherein the working channel overlaps along at least a second portion of the cut when the working channel is subjected to an axial compression force.

31. The assembly of claim 18 wherein the working channel is attached to the body portion at a plurality of attachment points.

32. The assembly of claim 18 wherein the working channel is adapted to slideably receive at least a portion of a medical device having an operating end, the working channel comprising an enlarged end portion proximate an end of the body portion, the enlarged end portion being adapted to at least partially receive the operating end of the medical device.

33. The assembly of claim 18, further comprising a headpiece attached to the insertion tube.

34. The assembly of claim 18 wherein the working channel comprises a channel fabricated from a material selected from the group consisting of TEFLON®, urethane, polyvinyl chloride (PVC), acrylic, polycarbonate, and polyethylene terephthalate.

35. The assembly of claim 18 wherein the body portion includes an end cap that encapsulates a working end of the insertion tube.

36. A sheath assembly adapted for use with an endoscopic insertion tube, the sheath assembly comprising:

a body portion adapted to at least partially encapsulate the insertion tube; and

a working channel attached to the body portion and extending along at least a portion of the body portion, the working channel having a gap disposed therein, the gap being at least partially transverse to a longitudinal axis of the working channel, the gap being adapted to widen along at least a portion thereof when the working channel is subjected to an axial tension force.

37. The assembly of claim 36 wherein the gap comprises a spiral gap.

38. The assembly of claim 36 wherein the working channel further has a plurality of additional gaps disposed therein, the plurality of additional gaps being at least partially transverse to the longitudinal axis, the working channel being adapted to widen along at least a portion of at least some of the additional gaps when the working channel is subjected to the axial tension force.

39. The assembly of claim 36 wherein the working channel includes a first plurality of additional gaps disposed in a first side thereof and a second plurality of additional gaps disposed in a second side thereof, the additional gaps being at least partially transverse to the longitudinal axis, the working channel being adapted to widen along at least a portion of at least some of the additional gaps when the working channel is subjected to the axial tension force.

40. The assembly of claim 39 wherein the second side is substantially opposite from the first side.

41. The assembly of claim 39 wherein the additional gaps are uniformly disposed within the working channel.

42. The assembly of claim 39 wherein the additional gaps are non-uniformly disposed within the working channel.

43. The assembly of claim 36 wherein the gap extends along a portion of the working channel adapted to be approximately aligned with a bending section of the insertion tube.

44. The assembly of claim 36 wherein the working channel is attached to an outer surface of the body portion.

45. The assembly of claim 36 wherein the working channel extends along an inner surface of the body portion and is adapted to be positioned between the body portion and the insertion tube when the body portion is positioned to at least partially encapsulate the insertion tube.

46. The assembly of claim 36 wherein the gap being adapted to narrow along at least a portion thereof when the working channel is subjected to an axial compression force.

47. The assembly of claim 36 wherein the working channel is attached to the body portion at a plurality of attachment points.

48. The assembly of claim 36 wherein the working channel is adapted to slideably receive at least a portion of a medical device having an operating end, the working channel comprising an enlarged end portion proximate an end of the body portion, the enlarged end portion being adapted to at least partially receive the operating end of the medical device.

49. The assembly of claim 36 wherein the working channel comprises a channel fabricated from a material selected from the group consisting of TEFLON[®], urethane, polyvinyl chloride (PVC), acrylic, polycarbonate, and polyethylene terephthalate.

50. The assembly of claim 36 wherein the body portion includes an end cap adapted to encapsulate a working end of the insertion tube.

51. An endoscopic assembly, comprising:
an elongated insertion tube;
a sheath assembly including a body portion at least partially encapsulating the insertion tube; and

a working channel attached to the body portion and extending along at least a portion of the body portion, the working channel having a gap disposed therein, the gap being at least partially transverse to a longitudinal axis of the working channel, the gap being adapted to widen along at least a portion thereof when the working channel is subjected to an axial tension force.

52. The assembly of claim 51 wherein the gap comprises a spiral gap.

53. The assembly of claim 51 wherein the working channel further has a plurality of additional gaps disposed therein, the plurality of additional gaps being at least partially transverse to the longitudinal axis, the working channel being adapted to widen along at least a portion of at least some of the additional gaps when the working channel is subjected to the axial tension force.

54. The assembly of claim 51 wherein the working channel includes a first plurality of additional gaps disposed in a first side thereof and a second plurality of additional gaps disposed in a second side thereof, the additional gaps being at least partially transverse to the longitudinal axis, the working channel being adapted to widen along at least a portion of at least some of the additional gaps when the working channel is subjected to the axial tension force.

55. The assembly of claim 54 wherein the second side is substantially opposite from the first side.

56. The assembly of claim 54 wherein the additional gaps are uniformly disposed within the working channel.

57. The assembly of claim 54 wherein the additional gaps are non-uniformly disposed within the working channel.

58. The assembly of claim 51 wherein the gap extends along a portion of the working channel adapted to be approximately aligned with a bending section of the insertion tube.

59. The assembly of claim 51 wherein the working channel is attached to an outer surface of the body portion.

60. The assembly of claim 51 wherein the working channel extends along an inner surface of the body portion and is adapted to be positioned between the body portion and the insertion tube when the body portion is positioned to at least partially encapsulate the insertion tube.

61. The assembly of claim 51 wherein the gap being adapted to narrow along at least a portion thereof when the working channel is subjected to an axial compression force.

62. The assembly of claim 51 wherein the working channel is attached to the body portion at a plurality of attachment points.

63. The assembly of claim 51 wherein the working channel is adapted to slideably receive at least a portion of a medical device having an operating end, the working channel comprising an enlarged end portion proximate an end of the body portion, the

enlarged end portion being adapted to at least partially receive the operating end of the medical device.

64. The assembly of claim 51, further comprising a headpiece attached to the insertion tube.

65. The assembly of claim 51 wherein the working channel comprises a channel fabricated from a material selected from the group consisting of TEFLON®, urethane, polyvinyl chloride (PVC), acrylic, polycarbonate, and polyethylene terephthalate.

66. The assembly of claim 51 wherein the body portion includes an end cap that encapsulates a working end of the insertion tube.

67. The assembly of claim 51 wherein the body portion includes a tubular portion that encapsulates a portion of the insertion tube, and an end cap that encapsulates a working end of the insertion tube, the tubular portion being axially stretched onto the insertion tube.

68. A sheath assembly adapted for use with an endoscopic insertion tube having a working end adapted to be insertable into a patient, the sheath assembly comprising:

a body portion adapted to at least partially encapsulate the insertion tube, the body portion having a distal end adapted to be proximate the working end of the insertion tube when the body portion is positioned to at least partially encapsulate the insertion tube; and

a working channel attached to the body portion proximate the distal end and having a sliding portion extending along at least a part of the body portion, the sliding portion being axially slideable along the body portion when the working channel is subjected to an axial force.

69. The assembly of claim 68 wherein the sliding portion is coupled to the body portion by a sleeve support.

70. The assembly of claim 68 wherein the working channel comprises a collapsible channel.

71. The assembly of claim 68 wherein the working channel includes a fitting attached to a proximal end thereof.

72. The assembly of claim 68 wherein the working channel includes a fitting attached to a proximal end thereof, the assembly further comprising a collar attached to the body portion, the collar slideably receiving and guiding the fitting when the working channel is subjected to the axial force.

73. The assembly of claim 68, further comprising a collar attached to the body portion, the collar slideably receiving and guiding a proximal end of the working channel when the working channel is subjected to the axial force.

74. The assembly of claim 68 wherein the working channel is adapted to slideably receive at least a portion of a medical device having an operating end, the working channel comprising an enlarged end portion proximate the distal end of the body portion, the enlarged end portion being adapted to at least partially receive the operating end of the medical device.

75. The assembly of claim 68 wherein the working channel comprises a channel fabricated from a material selected from the group consisting of TEFLON®, urethane, polyvinyl chloride (PVC), acrylic, polycarbonate, and polyethylene terephthalate.

76. The assembly of claim 68 wherein the body portion includes an end cap adapted to encapsulate a working end of the insertion tube.

77. The assembly of claim 68 wherein the working channel is attached to the body portion proximate a first end of the working channel, the working channel including a second end opposite from the first end, and an expansion section coupled between the sliding portion and the second end, the expansion section including an expansion member that is axially expandable when the working channel is subjected to an axial tension force.

78. An endoscopic assembly, comprising:
an elongated insertion tube having a working end;
a sheath assembly including a body portion that at least partially encapsulates the insertion tube, the body portion having a distal end proximate the working end of the insertion tube; and

a working channel attached to the body portion proximate the distal end and having a sliding portion extending along at least a part of the body portion, the sliding portion being axially slideable along the body portion when the working channel is subjected to an axial force.

79. The assembly of claim 78 wherein the sliding portion is coupled to the body portion by a sleeve support.

80. The assembly of claim 78 wherein the working channel comprises a collapsible channel.

81. The assembly of claim 78 wherein the working channel includes a fitting attached to a proximal end thereof.

82. The assembly of claim 78 wherein the working channel includes a fitting attached to a proximal end thereof, the assembly further comprising a collar attached to the body portion, the collar slideably receiving and guiding the fitting when the working channel is subjected to the axial force.

83. The assembly of claim 78, further comprising a collar attached to the body portion, the collar slideably receiving and guiding a proximal end of the working channel when the working channel is subjected to the axial force.

84. The assembly of claim 78 wherein the working channel is adapted to slideably receive at least a portion of a medical device having an operating end, the working channel comprising an enlarged end portion proximate the distal end of the body portion, the enlarged end portion being adapted to at least partially receive the operating end of the medical device.

85. The assembly of claim 78 wherein the working channel comprises a channel fabricated from a material selected from the group consisting of TEFLON®, urethane, polyvinyl chloride (PVC), acrylic, polycarbonate, and polyethylene terephthalate.

86. The assembly of claim 78 wherein the body portion includes an end cap that encapsulates the working end of the insertion tube.

87. The assembly of claim 78 wherein the working channel is attached to the body portion proximate a first end of the working channel, the working channel including a second end opposite from the first end, and an expansion section coupled between the sliding portion and the second end, the expansion section including an expansion member that is axially expandable when the working channel is subjected to an axial tension force.

88. The assembly of claim 78, further comprising a headpiece attached to the insertion tube.

89. A sheath assembly adapted for use with an endoscopic insertion tube having a working end adapted to be insertable into a patient and a proximal end adapted to remain external to the patient, the sheath assembly comprising:

a body portion adapted to at least partially encapsulate the insertion tube, the body portion having first and second ends adapted to be proximate the working and proximal ends, respectively, of the insertion tube when the body portion is positioned to at least partially encapsulate the insertion tube; and

a working channel attached to the body portion proximate the first end, the working channel having a sliding portion extending along a first part of the body portion, the sliding portion being axially slideable along the first part of the body portion when the working channel is subjected to an axial force, the working channel further including an expansion section coupled between the sliding portion and the second end, the expansion section including an expansion member that is axially expandable when the working channel is subjected to the axial force.

90. The assembly of claim 89 wherein the body portion of the sheath assembly is adapted to be axially stretched onto the insertion tube when the body portion is positioned to at least partially encapsulate the insertion tube.

91. The assembly of claim 89 wherein the expansion section comprises a corrugated member coupled between the sliding portion and the second end, the corrugated member including a plurality of corrugations that expand when the working channel is subjected to the axial force.

92. The assembly of claim 89 wherein the expansion section comprises a corrugated member coupled between the sliding portion and the second end, the corrugated member including a plurality of corrugations that expand when the working channel is subjected to an axial tension force and contract when the working channel is subjected to an axial compression force.

93. The assembly of claim 89 wherein the expansion section comprises:
a corrugated inner member coupled between the sliding portion and the second end, the corrugated inner member including a plurality of corrugations that expand when the working channel is subjected to the axial force; and

a flexible outer member coupled between the sliding portion and the second end and encapsulating the corrugated inner member.

94. The assembly of claim 89 wherein the expansion section comprises:
a corrugated inner member coupled between the sliding portion and the second end, the corrugated inner member including a plurality of corrugations that expand when the working channel is subjected to the axial force; and

an outer member encapsulating the corrugated inner member .

95. The assembly of claim 89 wherein the expansion section comprises a flexible resilient portion coupled between the sliding portion and the second end.

96. The assembly of claim 89 wherein the sliding portion is coupled to the body portion by a sleeve support.

97. The assembly of claim 89 wherein the working channel includes a fitting attached to the second end thereof.

98. The assembly of claim 89 wherein the working channel comprises a channel fabricated from a material selected from the group consisting of TEFLON[®], urethane, polyvinyl chloride (PVC), acrylic, polycarbonate, and polyethylene terephthalate.

99. The assembly of claim 89 wherein the body portion includes an end cap adapted to encapsulate a working end of the insertion tube.

100. An endoscopic assembly, comprising:

an elongated insertion tube having a working end adapted to be insertable into a patient and a proximal end adapted to remain external to the patient;

a sheath assembly comprising a body portion that at least partially encapsulates the insertion tube, the body portion having first and second ends proximate the working and proximal ends, respectively, of the insertion tube; and

a working channel attached to the body portion proximate the first end, the working channel having a sliding portion extending along a first part of the body portion, the sliding portion being axially slideable along the first part of the body portion when the working channel is subjected to an axial force, the working channel further including an expansion section coupled between the sliding portion and the second end, the expansion section including an expansion member that is axially expandable when the working channel is subjected to the axial force.

101. The assembly of claim 100 wherein the body portion of the sheath assembly is axially stretched onto the insertion tube when the body portion is positioned to at least partially encapsulate the insertion tube.

102. The assembly of claim 100 wherein the expansion section comprises a corrugated member coupled between the sliding portion and the second end, the corrugated member including a plurality of corrugations that expand when the working channel is subjected to the axial force.

103. The assembly of claim 100 wherein the expansion section comprises a corrugated member coupled between the sliding portion and the second end, the corrugated member including a plurality of corrugations that expand when the working channel is subjected to an axial tension force and contract when the working channel is subjected to an axial compression force.

104. The assembly of claim 100 wherein the expansion section comprises:

a corrugated inner member coupled between the sliding portion and the second end, the corrugated inner member including a plurality of corrugations that expand when the working channel is subjected to the axial force; and

a flexible outer member coupled between the sliding portion and the second end and encapsulating the corrugated inner member.

105. The assembly of claim 100 wherein the expansion section comprises:

a corrugated inner member coupled between the sliding portion and the second end, the corrugated inner member including a plurality of corrugations that expand when the working channel is subjected to the axial force; and

an outer member encapsulating the corrugated inner member.

106. The assembly of claim 100 wherein the expansion section comprises a flexible resilient portion coupled between the sliding portion and the second end.

107. The assembly of claim 100 wherein the sliding portion is coupled to the body portion by a sleeve support.

108. The assembly of claim 100 wherein the working channel includes a fitting attached to the second end thereof.

109. The assembly of claim 100 wherein the working channel comprises a channel fabricated from a material selected from the group consisting of TEFLON[®], urethane, polyvinyl chloride (PVC), acrylic, polycarbonate, and polyethylene terephthalate.

110. The assembly of claim 100 wherein the body portion includes an end cap adapted to encapsulate a working end of the insertion tube.

111. The assembly of claim 100, further comprising a headpiece attached to the insertion tube.

112. A method of performing a procedure using an endoscopic insertion tube, comprising:

providing a sheath assembly having a body portion that at least partially encapsulates the endoscopic insertion tube;

providing a working channel attached to the body portion and extending along at least a portion of the body portion, the working channel having a cut disposed therein, the cut being at least partially transverse to a longitudinal axis of the working channel, the working channel being separable along at least a portion of the cut when the working channel is subjected to an axial tension force; and

exerting an axial tension force on the working channel to separate the working channel along at least a portion of the cut.

113. The method of claim 112 wherein providing a working channel attached to the body portion comprises providing a working channel having a spiral cut disposed therein.

114. The method of claim 112 wherein providing a working channel attached to the body portion comprises providing a working channel having a plurality of additional cuts disposed therein, the plurality of additional cuts being at least partially transverse to the longitudinal axis, the working channel being separable along at least a portion of at least some of the plurality of additional cuts when the working channel is subjected to the axial tension force.

115. The method of claim 112 wherein providing a working channel attached to the body portion comprises providing a working channel having a cut that extends approximately perpendicularly to the longitudinal axis of the working channel disposed therein.

116. The method of claim 112 wherein providing a working channel attached to the body portion comprises providing a working channel having a cut that extends only partially through the working channel disposed therein.

117. The method of claim 112 wherein providing a working channel attached to the body portion comprises providing a working channel having a cut approximately aligned with a bending section of the insertion tube.

118. The method of claim 112 wherein providing a working channel attached to the body portion comprises providing a working channel attached to an outer surface of the body portion.

119. The method of claim 112 wherein providing a working channel attached to the body portion comprises providing a working channel that extends along an inner surface of the body portion adjacent the insertion tube.

120. The method of claim 112 wherein providing a working channel attached to the body portion comprises providing a working channel adapted to overlap along at least a second portion of the cut when the working channel is subjected to an axial compression force.

121. The method of claim 112 wherein exerting an axial tension force on the working channel comprises articulating a bending section of the insertion tube to apply the axial tension force on the working channel.

122. The method of claim 112 wherein exerting an axial tension force on the working channel comprises stretching the body portion of the sheath assembly onto the insertion tube to apply the axial tension force on the working channel.

123. The method of claim 112, further comprising exerting an axial compression force on the working channel to compress the working channel along at least a second portion of the cut.

124. The method of claim 112, further comprising inserting a medical device through the working channel.

125. The method of claim 112 wherein providing a working channel includes providing a working channel having an enlarged end portion, further comprising drawing a medical device into the enlarged end portion of working channel.

126. The method of claim 112, further comprising inserting the insertion tube into a patient.

127. A method of performing a procedure using an endoscopic insertion tube, comprising:

providing a sheath assembly having a body portion that at least partially encapsulates the endoscopic insertion tube;

providing a working channel attached to the body portion and extending along at least a portion of the body portion, the working channel having a gap disposed therein, the gap being at least partially transverse to a longitudinal axis of the working channel, the working channel being separable along at least a portion of the gap when the working channel is subjected to an axial tension force; and

exerting an axial tension force on the working channel to separate the working channel along at least a portion of the gap.

128. The method of claim 127 wherein providing a working channel attached to the body portion comprises providing a working channel having a spiral gap disposed therein.

129. The method of claim 127 wherein providing a working channel attached to the body portion comprises providing a working channel having a gap approximately aligned with a bending section of the insertion tube.

130. The method of claim 127 wherein providing a working channel attached to the body portion comprises providing a working channel attached to an outer surface of the body portion.

131. The method of claim 127 wherein providing a working channel attached to the body portion comprises providing a working channel that extends along an inner surface of the body portion adjacent the insertion tube.

132. The method of claim 127 wherein providing a working channel attached to the body portion comprises providing a working channel adapted to overlap along at least a second portion of the gap when the working channel is subjected to an axial compression force.

133. The method of claim 127 wherein exerting an axial tension force on the working channel comprises articulating a bending section of the insertion tube to apply the axial tension force on the working channel.

134. The method of claim 127 wherein exerting an axial tension force on the working channel comprises stretching the body portion of the sheath assembly onto the insertion tube to apply the axial tension force on the working channel.

135. The method of claim 127, further comprising exerting an axial compression force on the working channel to compress the working channel along at least a second portion of the gap.

136. The method of claim 127, further comprising inserting a medical device through the working channel.

137. The method of claim 127 wherein providing a working channel includes providing a working channel having an enlarged end portion, further comprising drawing a medical device into the enlarged end portion of working channel.

138. The method of claim 127, further comprising inserting the insertion tube into a patient.

139. A method of performing a procedure using an endoscopic insertion tube having a working end adapted to be insertable into a patient, comprising:

providing a sheath assembly having a body portion that at least partially encapsulates the endoscopic insertion tube, the body portion having a distal end proximate the working end of the insertion tube;

providing a working channel attached to the body portion proximate the distal end and having a sliding portion extending along at least part of the body portion, the sliding portion being axially slideable along the body portion when the working channel is subjected to an axial force; and

exerting an axial force on the working channel to axially slide the sliding portion of the working channel along the body portion.

140. The method of claim 139 wherein providing a working channel attached to the body portion comprises providing a working channel having a sliding portion coupled to the body portion by a sleeve support.

141. The method of claim 139 wherein providing a working channel attached to the body portion comprises providing a collapsible channel attached to the body portion.

142. The method of claim 139 wherein providing a working channel attached to the body portion comprises providing a working channel having a first end proximate the distal end and a second end opposite from the first end, the working channel including a fitting attached to the second end.

143. The method of claim 139 wherein providing a working channel attached to the body portion comprises providing a working channel having a first end proximate the distal end and a second end opposite from the first end, the working channel including a fitting attached to the second end, the method further comprising slideably receiving and guiding the fitting when the working channel is subjected to the axial force.

144. The method of claim 143 wherein slideably receiving and guiding the fitting comprises slideably receiving and guiding the fitting within a collar attached to the body portion of the sheath.

145. The method of claim 139 wherein exerting an axial force on the working channel comprises articulating a bending section of the insertion tube to apply the axial force on the working channel.

146. The method of claim 139 wherein exerting an axial force on the working channel comprises stretching the body portion of the sheath assembly onto the insertion tube to apply an axial tension force on the working channel.

147. The method of claim 139, further comprising inserting a medical device through the working channel.

148. The method of claim 139 wherein providing a working channel includes providing a working channel having an enlarged end portion, further comprising drawing a medical device into the enlarged end portion of working channel.

149. The method of claim 139, further comprising inserting working end of the insertion tube into a patient.

150. A method of performing a procedure using an endoscopic insertion tube having a working end adapted to be insertable into a patient and a proximal end adapted to remain external to the patient, comprising:

providing a sheath assembly having a body portion that at least partially encapsulates the endoscopic insertion tube, the body portion having a distal end proximate the working end of the insertion tube;

providing a working channel attached to the body portion proximate the distal end and having a sliding portion extending along at least a first part of the body portion, the sliding portion being axially slideable along the first part of the body portion when the working channel is subjected to an axial force, the working channel further including an expansion section coupled between the sliding portion and the second end, the expansion section including an expansion member that is axially expandable when the working channel is subjected to the axial force; and

exerting an axial force on the working channel to axially slide the sliding portion of the working channel along the first part of the body portion and to axially expand the expansion member.

151. The method of claim 150 wherein providing a working channel attached to the body portion comprises providing a working channel including an expansion section having a corrugated member coupled between the sliding portion and the second end, the corrugated member including a plurality of corrugations that expand when the working channel is subjected to the axial force.

152. The method of claim 150 wherein providing a working channel attached to the body portion comprises providing a working channel including an expansion

section having a corrugated member coupled between the sliding portion and the second end, the corrugated member including a plurality of corrugations that expand when the working channel is subjected to an axial tension force and contract when the working channel is subjected to an axial compression force.

153. The method of claim 150 wherein providing a working channel attached to the body portion comprises providing a working channel including an expansion section comprising:

a corrugated inner member coupled between the sliding portion and the second end, the corrugated inner member including a plurality of corrugations that expand when the working channel is subjected to the axial force; and

a flexible outer member coupled between the sliding portion and the second end and encapsulating the corrugated inner member.

154. The method of claim 150 wherein providing a working channel attached to the body portion comprises providing a working channel including an expansion section comprising:

a corrugated inner member coupled between the sliding portion and the second end, the corrugated inner member including a plurality of corrugations that expand when the working channel is subjected to the axial force; and

an outer member encapsulating the corrugated inner member.

155. The method of claim 150 wherein providing a working channel attached to the body portion comprises providing a working channel including an expansion section having a flexible resilient portion coupled between the sliding portion and the second end.

156. The method of claim 150 wherein providing a working channel attached to the body portion comprises providing a working channel having a sliding portion coupled to the body portion by a sleeve support.

157. The method of claim 150 wherein providing a working channel attached to the body portion comprises providing a collapsible channel attached to the body portion.

158. The method of claim 150 wherein providing a working channel attached to the body portion comprises providing a working channel having a first end proximate the distal end and a second end opposite from the first end, the working channel including a fitting attached to the second end.

159. The method of claim 150 wherein exerting an axial force on the working channel comprises articulating a bending section of the insertion tube to apply the axial force on the working channel.

160. The method of claim 150 wherein exerting an axial force on the working channel comprises stretching the body portion of the sheath assembly onto the insertion tube to apply an axial tension force on the working channel.

161. The method of claim 150, further comprising inserting a medical device through the working channel.

162. The method of claim 150 wherein providing a working channel includes providing a working channel having an enlarged end portion, further comprising drawing a medical device into the enlarged end portion of working channel.

163. The method of claim 150, further comprising inserting working end of the insertion tube into a patient.